

In the Claims

1. (Currently Amended) Apparatus comprising:

an optical fiber; and

a chip-level optical transceiver carried by a
bench disposed in a tilted state aligning the chip-
level optical transceiver with the optical fiber, the
chip-level optical transceiver comprising:

a light emitting device, having an output, for
emitting a first wavelength of light along a first
optical path;

a first photodiode for controlling the output of
the light emitting device;

a second photodiode having an active region;

a lens for receiving the first wavelength of light
along the first optical path from the light emitting
device and collimating the first wavelength of light to
the second photodiode along the first optical path; and

the second photodiode for reflecting the first wavelength of light along the first optical path into the optical fiber along a second optical path.

2. (Original) Apparatus of claim 1, further comprising a package securing and containing the optical fiber, the bench, and the chip-level optical transceiver carried by the bench.

3. (Original) Apparatus of claim 2, wherein the package comprises:

a support structure securing the fiber;

a header coupled to the support structure; and

the bench carried by the header in front of the optical fiber.

4. (Original) Apparatus of claim 3, wherein the package hermetically seals the bench and the chip-level optical transceiver carried thereby.

5. (Canceled)

6. (Currently Amended) Apparatus of claim 54,
further comprising:

the optical fiber for transmitting a second wavelength of light to the second photodiode along the second optical path; and

the second photodiode adapted and arranged to permit the second wavelength of light to pass therethrough to the active region thereof for conversion into an electrical signal.

7. (Original) Apparatus of claim 6, wherein the first wavelength of light is different from the second wavelength of light.

8. (Currently Amended) Apparatus comprising:

an optical fiber;

a header mounted adjacent the optical fiber; and

a chip-level optical transceiver supported by a
bench carried by the header in a tilted state aligning
the chip-level optical transceiver components with the
optical fiber, the chip-level optical transceiver
comprising:

a light emitting device, having an output, for
emitting a first wavelength of light along a first
optical path;

a first photodiode for controlling the output of
the light emitting device;

a second photodiode having an active region;

a lens for receiving the first wavelength of light
along the first optical path from the light emitting
device and collimating the first wavelength of light to

the second photodiode along the first optical path; and

the second photodiode for reflecting the first wavelength of light along the first optical path into the optical fiber along a second optical path.

9. (Original) Apparatus of claim 8, further comprising:

a support structure securing the fiber; and

the header coupled to the support structure.

10. (Original) Apparatus of claim 9, wherein the support structure and the header cooperate to hermetically seal the bench and the chip-level optical transceiver carried thereby.

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11. (Canceled)

12. (Currently Amended) Apparatus of claim 110,
further comprising:

the optical fiber for transmitting a second wavelength of light to the second photodiode along the second optical path; and

the second photodiode adapted and arranged to permit the second wavelength of light to pass therethrough to the active region thereof for conversion into an electrical signal.

13. (Original) Apparatus of claim 12, wherein the first wavelength of light is different from the second wavelength of light.

14. (Original) Apparatus of claim 12, wherein the first optical path is coincident to the second optical path.

15. (Currently Amended) Apparatus comprising:

a package including a header;

an optical fiber extending into the package, and
secured thereby adjacent the header; and

a chip-level optical transceiver supported by a
bench carried by the header in a tilted state aligning
the chip-level optical transceiver components with the
optical fiber, the chip-level optical transceiver
comprising:

a light emitting device, having an output, for
emitting a first wavelength of light along a first
optical path;

a first photodiode for controlling the output of
the light emitting device;

a second photodiode having an active region;

a lens for receiving the first wavelength of light
along the first optical path from the light emitting

device and collimating the first wavelength of light to
the second photodiode along the first optical path; and

the second photodiode for reflecting the first
wavelength of light along the first optical path into
the optical fiber along a second optical path.

16. (Original) Apparatus of claim 15, wherein the package hermetically seals the bench and the chip-level optical transceiver carried thereby.

17. (Canceled)

18. (Currently Amended) Apparatus of claim 1716, further comprising:

the optical fiber for transmitting a second wavelength of light to the second photodiode along the second optical path; and

the second photodiode adapted and arranged to permit the second wavelength of light to pass therethrough to the active region thereof for conversion into an electrical signal.

19. (Original) Apparatus of claim 18, wherein the first wavelength of light is different from the second wavelength of light.

20. (Original) Apparatus of claim 18, wherein the first optical path is coincident to the second optical path.